

Comprehensive Remedial Investigation/Feasibility Study for the Test Area North Operable Unit 1-10 at the Idaho National Engineering and Environmental Laboratory

1. INTRODUCTION

The Department of Energy-Idaho Operations Office (DOE-ID) is conducting a remedial investigation and feasibility study (RI/FS) for the 10 operable units (OUs) located at the Test Area North (TAN) of the Idaho National Engineering and Environmental Laboratory (INEEL) in eastern Idaho. This investigation is being conducted in accordance with a Federal Facilities Agreement and Consent Order (FFA/CO) among the Environmental Protection Agency (EPA)-Region 10, the State of Idaho Department of Health and Welfare (IDHW), and the DOE-ID.

TAN is included as Waste Area Group (WAG) 1 of the 10 INEEL WAGs identified in the FFA/CO. The 10 OUs in WAG 1 are comprised of: Remedial Investigation (RI) Sites, Interim Action Sites, Track 2 Sites, Track 1 Sites, "No Action" Sites, or New and Unevaluated Sites (i.e., those sites that were not listed in the FFA/CO). TAN release sites including the OUs and the sites within each OU are illustrated on Figures 1-1 through 1-4. Detailed descriptions of each site are provided in Attachment I, Section 2.1.1, of the *Work Plan for Waste Area Group 1 Operable Unit 1-10 Comprehensive Remedial Investigation/Feasibility Study*, (Lewis et al. 1996). The status of WAG 1 sites is summarized in Table 1-1.

1.1 Purpose and Objective

OU 1-10 is defined in the FFA/CO as the WAG 1 Comprehensive RI/FS, including the Technical Support Facility (TSF) Paint Shop Floor Drain Leach Field (West of TAN-636). The purpose of this remedial investigation/baseline risk assessment (RI/BRA) is to fill the data gaps identified in the RI/FS Work Plan, define the nature and extent of the contamination, and perform a comprehensive cumulative baseline risk assessment of WAG 1 sites. This RI/BRA will be compiled into the comprehensive RI/FS report, which will also include the feasibility study (FS) for TAN.

The objectives of the comprehensive TAN RI/FS follow:

1. Identify data gaps that remained following the performance of previous assessments. Develop and implement field investigations to fill data gaps.
2. Define the nature and extent of contamination at WAG 1 sites.
3. Define contaminant transport mechanisms and develop exposure scenarios.
4. Determine the current and future cumulative comprehensive risk posed by the contaminants of concern to human health and the environment.
5. Develop remedial action objectives and general response actions.

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Loss-of-Fluid Test Facility (LOFT) With CERCLA Sites

OPERABLE UNIT	SITE CODE	ACTION	DESCRIPTION
1-06	LOFT-01	Track 1	LOFT Diesel Fuel Spills
1-04	LOFT-02	Track 2	LOFT Diesel Fuel Spills
1-01	LOFT-03	Track 1	LOFT Diesel Fuel Spills
—	LOFT-04	No Action	LOFT Diesel Fuel Spills
1-02	LOFT-05	Track 1	LOFT Diesel Fuel Spills
1-02	LOFT-06	Track 1	LOFT Diesel Fuel Spills
1-01	LOFT-07	Track 1	LOFT Diesel Fuel Spills
1-02	LOFT-08	Track 1	LOFT Diesel Fuel Spills
1-06	LOFT-09	No Action	LOFT Diesel Fuel Spills
1-06	LOFT-10	Track 1	LOFT Diesel Fuel Spills
1-01	LOFT-11	Track 1	LOFT Diesel Fuel Spills
New Site	LOFT-12	Track 1	LOFT Diesel Fuel Spills
—	LOFT-13	No Action	LOFT Diesel Fuel Spills
1-01	LOFT-14	Track 1	LOFT Diesel Fuel Spills
1-01	LOFT-15	Track 1	LOFT Diesel Fuel Spills
1-01	LOFT-16	Track 1	LOFT Diesel Fuel Spills
New Site	17	No Inactive Waste Site	LOFT Diesel Fuel Spills
—	SMC-01	No Action	LOFT Diesel Fuel Spills

Roads and Buildings
 Fences
 Railroad Tracks
 Depressions
 Underground Storage Tanks
 Metals and Organics
 Metals, Organics, and Rad.
 Fuel Oil
 Construction Debris
 PCBs
 No Known Hazardous Materials
 No Action



Date Drawn: February 11, 1997

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(figs/04/drainhood_loftca-11x17)

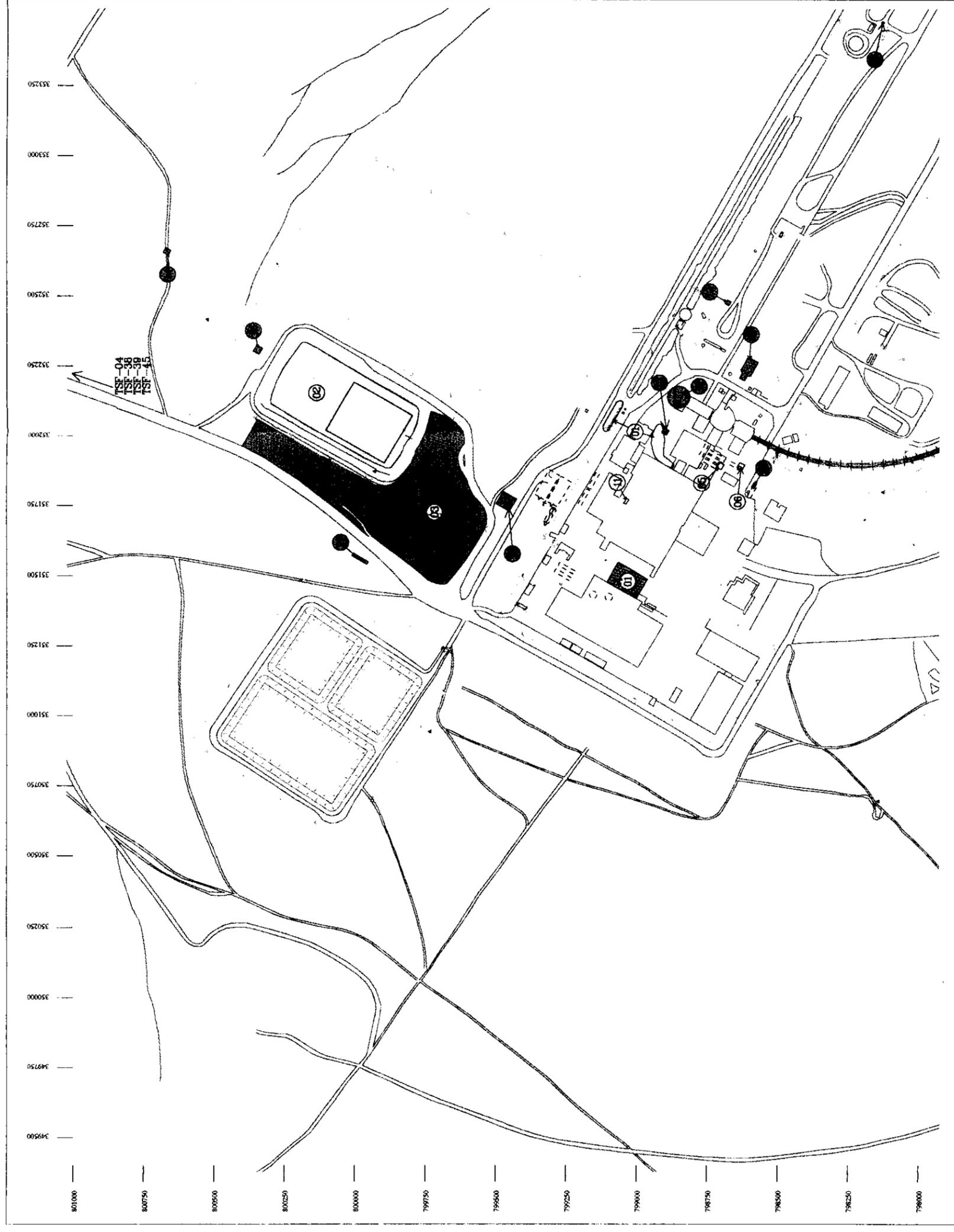


Figure 1-2. Loss-of-Fluid Test Facility release sites.

Technical Support Facility (TSF) with CERCLA Sites

OPERABLE UNIT	SITE CODE	ACTION	DESCRIPTION
1-01	TSF-01	Track 1	TSF Diesel Tank
1-03	TSF-02	Track 2	TSF Service Station Spill
1-03	TSF-03	Track 2	TSF Burn Pit
1-03	TSF-04	RUPS	TSF Injection Well
1-07A	TSF-05	Track 2	TSF Injection Well
1-06	TSF-06	Track 2	Recommended for OU 10/06 RUF5
1-06	TSF-07	Track 1	Recommended for OU 1-10 RUF5
1-06	TSF-08	No Action	Recommended for CERCLA Removal Action; Planned for FY 94
1-05	TSF-09	Track 2	TSF Intermediate-Level Waste Disposal System
1-05	TSF-10	Track 2	TSF Intermediate-Level Waste Disposal System
1-01	TSF-11	Track 1	Recommended for Removal Action as part of OU 1-08 Track 2
1-04	TSF-12	Track 2	TSF Acid Neutralization Slump
1-02	TSF-13	Track 1	TSF Acid Neutralization Tank
1-02	TSF-14	Track 1	TSF Fuel Oil Tank
1-02	TSF-15	Track 1	TSF Fuel Oil Tank
1-04	TSF-16	Track 2	Recommended for COCA; No Action under PFAACO
1-05	TSF-17	Track 2	TSF Acid Neutralization Pits (2)
1-04	TSF-18	Track 2	TSF Comminuted Tank (V-3)
1-04	TSF-19	Track 2	TSF Comminuted Tank (V-4)
1-04	TSF-20	Track 2	TSF Comminuted Tank (V-5)
1-05	TSF-21	Track 2	TSF Neutralization Pits (2)
1-08	TSF-22	Track 2	Recommended for OU 1-10 RUF5; Additional
1-07B	TSF-23	RUF5	TSF Acid Neutralization Tank
1-07A	TSF-24	LA	TSF Acid Neutralization Tank
1-02	TSF-25	Track 1	TSF Drinking Water Potential Contamination
1-02	TSF-26	Track 1	TSF Drinking Water Potential Contamination
1-05	TSF-27	Track 2	TSF Fuel Oil Tank
1-05	TSF-28	Track 2	TSF Fuel Oil Tank
1-08	TSF-29	Track 2	Recommended for OU 10-06 RUF5
1-08	TSF-30	Track 2	TSF Fuel Oil Tank
1-04	TSF-31	Track 2	TSF Fuel Oil Tank
1-02	TSF-32	Track 1	TSF Fuel Oil Tank
1-02	TSF-33	Track 1	TSF Fuel Oil Tank
1-02	TSF-34	Track 1	TSF Fuel Oil Tank
1-09	TSF-35	Track 1	TSF Fuel Oil Tank
1-09	TSF-36	Track 1	TSF Fuel Oil Tank
1-01	TSF-37	Track 1	TSF Fuel Oil Tank
1-01	TSF-38	Track 1	TSF Fuel Oil Tank
1-01	TSF-39	Track 1	TSF Fuel Oil Tank
1-01	TSF-40	Track 1	TSF Fuel Oil Tank
1-01	TSF-41	Track 1	TSF Fuel Oil Tank
1-01	TSF-42	Track 1	TSF Fuel Oil Tank
1-01	TSF-43	Track 1	TSF Fuel Oil Tank
1-01	TSF-44	Track 1	TSF Fuel Oil Tank
1-01	TSF-45	Track 1	TSF Fuel Oil Tank
1-01	TSF-46	Track 1	TSF Fuel Oil Tank
1-01	TSF-47	Track 1	TSF Fuel Oil Tank
1-01	TSF-48	Track 1	TSF Fuel Oil Tank
1-01	TSF-49	Track 1	TSF Fuel Oil Tank
1-01	TSF-50	Track 1	TSF Fuel Oil Tank
1-01	TSF-51	Track 1	TSF Fuel Oil Tank
1-01	TSF-52	Track 1	TSF Fuel Oil Tank
1-01	TSF-53	Track 1	TSF Fuel Oil Tank
1-01	TSF-54	Track 1	TSF Fuel Oil Tank
1-01	TSF-55	Track 1	TSF Fuel Oil Tank
1-01	TSF-56	Track 1	TSF Fuel Oil Tank
1-01	TSF-57	Track 1	TSF Fuel Oil Tank
1-01	TSF-58	Track 1	TSF Fuel Oil Tank
1-01	TSF-59	Track 1	TSF Fuel Oil Tank
1-01	TSF-60	Track 1	TSF Fuel Oil Tank
1-01	TSF-61	Track 1	TSF Fuel Oil Tank
1-01	TSF-62	Track 1	TSF Fuel Oil Tank
1-01	TSF-63	Track 1	TSF Fuel Oil Tank
1-01	TSF-64	Track 1	TSF Fuel Oil Tank
1-01	TSF-65	Track 1	TSF Fuel Oil Tank
1-01	TSF-66	Track 1	TSF Fuel Oil Tank
1-01	TSF-67	Track 1	TSF Fuel Oil Tank
1-01	TSF-68	Track 1	TSF Fuel Oil Tank
1-01	TSF-69	Track 1	TSF Fuel Oil Tank
1-01	TSF-70	Track 1	TSF Fuel Oil Tank
1-01	TSF-71	Track 1	TSF Fuel Oil Tank
1-01	TSF-72	Track 1	TSF Fuel Oil Tank
1-01	TSF-73	Track 1	TSF Fuel Oil Tank
1-01	TSF-74	Track 1	TSF Fuel Oil Tank
1-01	TSF-75	Track 1	TSF Fuel Oil Tank
1-01	TSF-76	Track 1	TSF Fuel Oil Tank
1-01	TSF-77	Track 1	TSF Fuel Oil Tank
1-01	TSF-78	Track 1	TSF Fuel Oil Tank
1-01	TSF-79	Track 1	TSF Fuel Oil Tank
1-01	TSF-80	Track 1	TSF Fuel Oil Tank
1-01	TSF-81	Track 1	TSF Fuel Oil Tank
1-01	TSF-82	Track 1	TSF Fuel Oil Tank
1-01	TSF-83	Track 1	TSF Fuel Oil Tank
1-01	TSF-84	Track 1	TSF Fuel Oil Tank
1-01	TSF-85	Track 1	TSF Fuel Oil Tank
1-01	TSF-86	Track 1	TSF Fuel Oil Tank
1-01	TSF-87	Track 1	TSF Fuel Oil Tank
1-01	TSF-88	Track 1	TSF Fuel Oil Tank
1-01	TSF-89	Track 1	TSF Fuel Oil Tank
1-01	TSF-90	Track 1	TSF Fuel Oil Tank
1-01	TSF-91	Track 1	TSF Fuel Oil Tank
1-01	TSF-92	Track 1	TSF Fuel Oil Tank
1-01	TSF-93	Track 1	TSF Fuel Oil Tank
1-01	TSF-94	Track 1	TSF Fuel Oil Tank
1-01	TSF-95	Track 1	TSF Fuel Oil Tank
1-01	TSF-96	Track 1	TSF Fuel Oil Tank
1-01	TSF-97	Track 1	TSF Fuel Oil Tank
1-01	TSF-98	Track 1	TSF Fuel Oil Tank
1-01	TSF-99	Track 1	TSF Fuel Oil Tank
1-01	TSF-100	Track 1	TSF Fuel Oil Tank

Roads and Buildings
 Fences
 Railroad Tracks
 Metals and PCBs
 Metals and Organics
 Metals and Rad.
 Metals, Organics, and Rad.
 Metals, Organics, and Acids
 Metals
 Rad.
 Fuel Oil
 Acids
 Construction Debris
 No Known Hazardous Materials
 No Action



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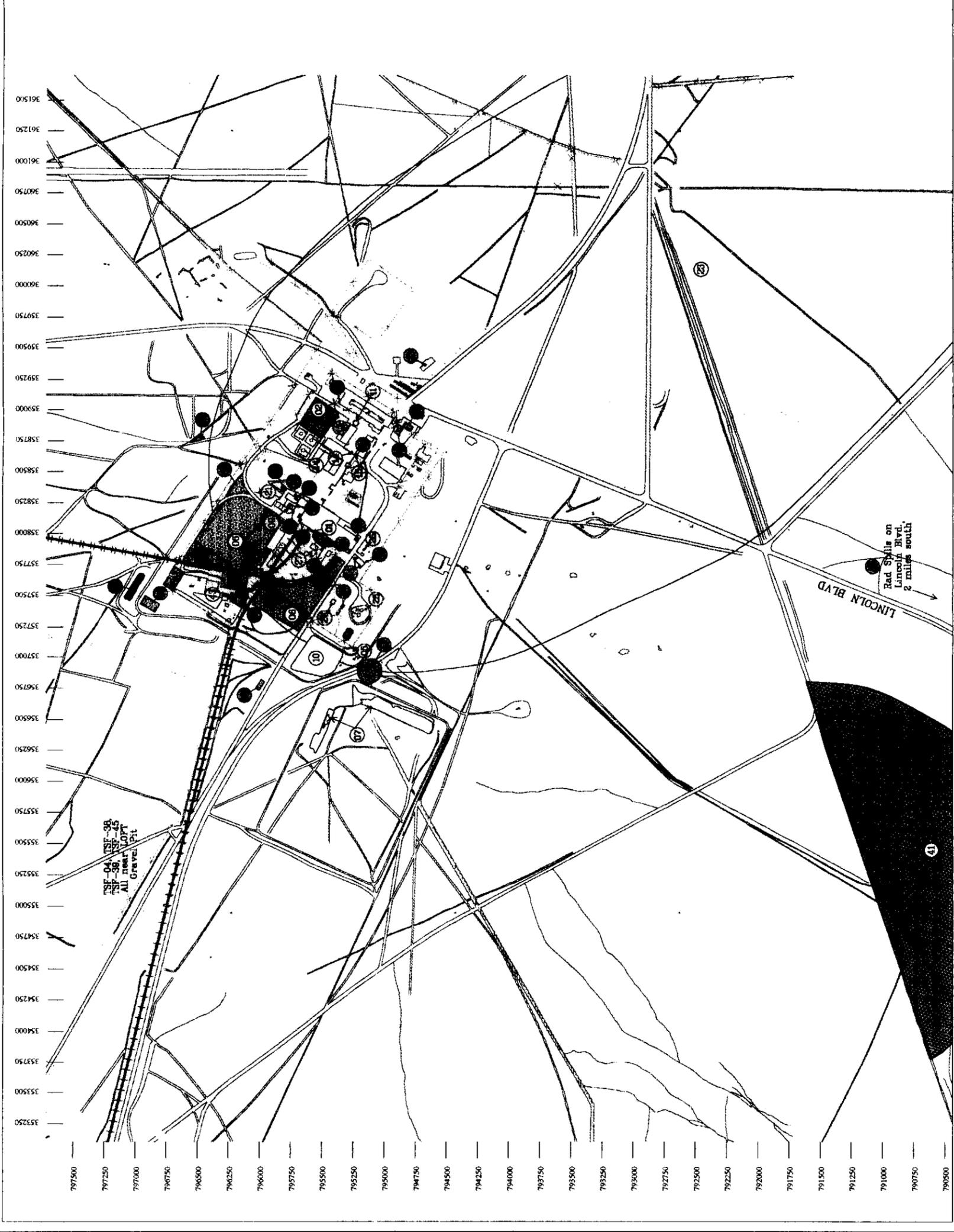
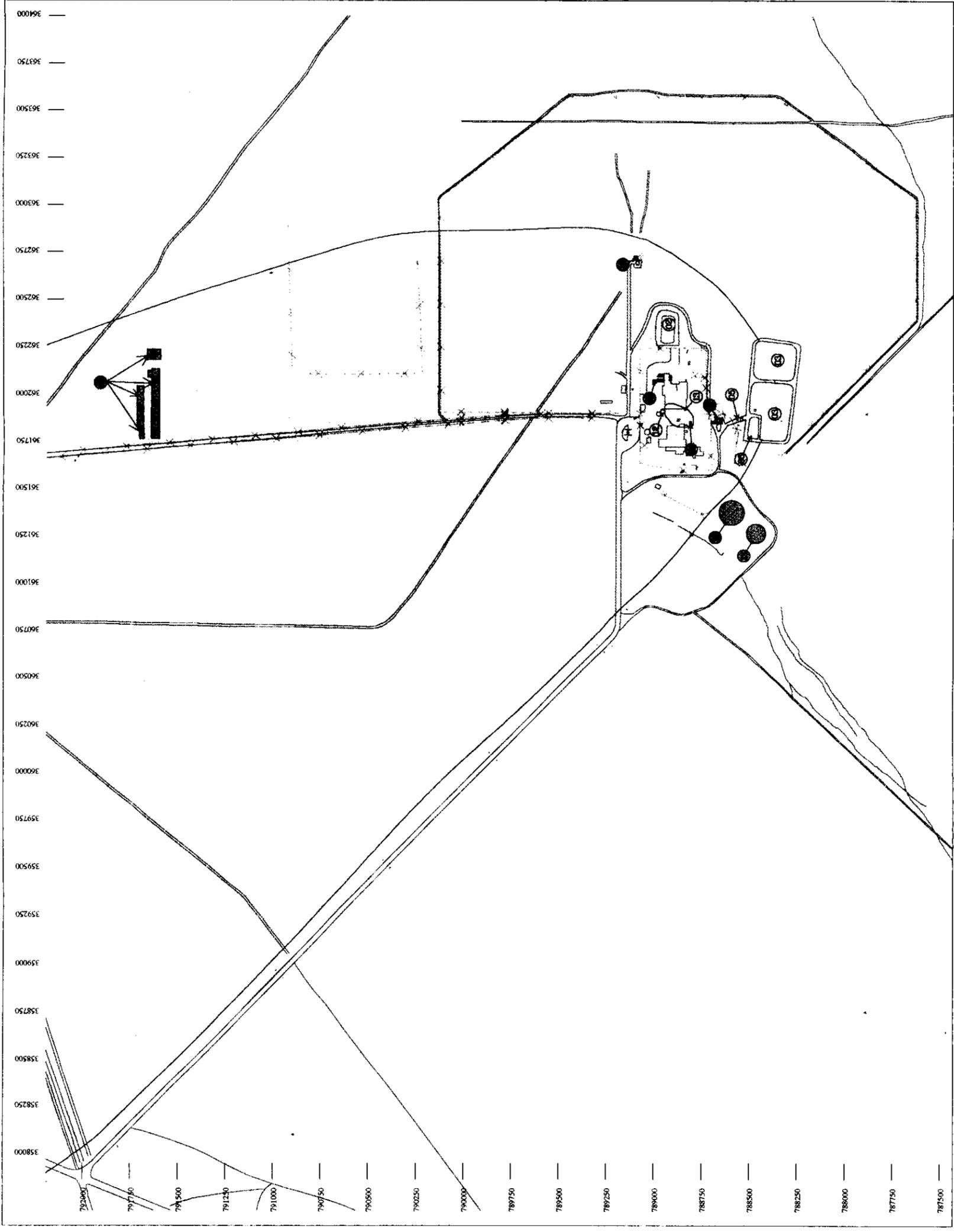


Figure 1-3. Technical Support Facility release sites.

Water Reactor Research Test Facility (WRRTF) With CERCLA Sites



OPERABLE UNIT	SITE CODE	ACTION	DESCRIPTION
1-03	WRRTF-01	Track 2	WRRTF Burn Pit
1-09	WRRTF-02	Track 1	WRRTF Two Phase Pond
1-09	WRRTF-03	Track 1	WRRTF Evaporation Pond
1-09	WRRTF-04	Track 2	WRRTF Associated Liquid Waste Tank
1-08	WRRTF-05	Track 2	WRRTF Incinerator Wall
1-09	WRRTF-06	Track 1	WRRTF Storage Lagoon
—	WRRTF-07	No Action	Removed from COCA, No Action under PFAACO
1-02	WRRTF-09	Track 1	WRRTF Diesel Fuel Tank
1-02	WRRTF-10	Track 1	WRRTF Gasoline Tank
1-02	WRRTF-11	Track 1	WRRTF Diesel Fuel Tank
1-02	WRRTF-12	Track 1	WRRTF Diesel Fuel Underground Storage Tank
1-08	WRRTF-13	Track 2	Recommended for CERCLA Removal Action: Planned for FY 94
New Site	14	Not Inactive Waste Site	Shed PDE SW of WRRTF
New Site	15	Not Inactive Waste Site	WRRTF Tritium Area

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Figure 1-4. Water Reactor Research Test Facility release sites.

Table 1-1. WAG 1 site status.

OPERABLE UNIT	OPERABLE UNIT NAME	Focus Group	SITE NUMBER	FFACO ACTION	SITE NAME	PROJECT YEARS	Action	Tr-1	Tr-2	IA	RIFS SOW	RIFS WP	RIFS WBRA	RIFS ROD	Further Action	Comments		
NONE Total = 13	COCA Sites determined to be No Further Action in 1991		IET-02	No Action	IET Burial Pit NE of IET	1991	✓								No	Removed from COCA; No Action under FFA/CO		
			IET-06	No Action	IET Septic Tank (TAN-710) and Filter Bed	1991	✓									No	Removed from COCA; No Action under FFA/CO	
			LOFT-04	No Action	LOFT Injection Well (TAN-733)	1991	✓									No	Removed from COCA; No Action under FFA/CO	
			LOFT-09	No Action	LOFT Septic Tank and Drain Field (TAN-782)	1991	✓									No	Removed from COCA; No Action under FFA/CO	
			LOFT-13	No Action	LOFT Dry Well (TAN-333)	1991	✓									No	Removed from COCA; No Action under FFA/CO	
			SMC-01	No Action	SMC Septic Tank and Drain Field (TAN-629)	1991	✓									No	Removed from COCA; No Action under FFA/CO	
			TSF-16	No Action	TSF Brine Pit N of TAN-606	1991	✓									No	Removed from COCA; No Action under FFA/CO	
			TSF-30	No Action	TSF Septic Tank E of TAN-602	1991	✓									No	Removed from COCA; No Action under FFA/CO	
			TSF-34	No Action	Fuel Tank S of TAN-607	1993	✓									No	Removed from COCA; No Action under FFA/CO	
			TSF-35	No Action	Acid Sump SE of TAN-609	1993	✓									No	Removed from COCA; No Action under FFA/CO	
			TSF-40	No Action	Rubble Pile Near TAN	1993	✓									No	Removed from COCA; No Action under FFA/CO	
			TSF-41	No Action	Scrap Yard South	1993	✓									No	Removed from COCA; No Action under FFA/CO	
			WRRTF-07	No Action	WRRTF Septic Tank and Sand Filters (TAN-737)	1991	✓									No	Removed from COCA; No Action under FFA/CO	
			NEW SITES Total = 15	New Sites identified after 1991		IET-03	No Action	IET Pond and Ditch W of IET	1994	✓								No
IET-04	No Action	IET Gravel Pit				1994	✓								No	New Site ID and Determined not to be an Inactive Waste Site		
IET-05	No Action	IET Burn Pit E of IET				1994	✓								No	New Site ID and Determined not to be an Inactive Waste Site		
LOFT-16	Track 1	LOFT Landfill NE of LOFT-02 Drainage Pond				1994	✓									No	New Site ID; Tr-1 Complete	
	No Action	LOFT Burn Pit NW of LOFT				1994	✓									No	New Site ID and Determined not to be an Inactive Waste Site	
	No Action	TSF Burn Pit U, SW of the TSF-05 Injection Well				1994	✓									No	New Site ID and Determined not to be an Inactive Waste Site	
	No Action	TSF Radioactive Spills on Bear Blvd. W of TAN-607				1994	✓									No	New Site ID and Determined not to be an Inactive Waste Site	
LOFT-12	No Action	Radioactive Spill 2 mi. S of TAN on Lincoln Blvd.				1994	✓									No	New Site ID and Determined not to be an Inactive Waste Site	
	Track 1	LOFT N Transformer Yard PCB Spill and Soil Site				1994	✓										No	New Site ID; CERCLA Removal Action completed FY 94
	No Action	Sand Piles S of TSF and SW of WRRTF				1994	✓									No	New Site ID and Determined not to be an Inactive Waste Site	
	No Action	WRRTF Transite Area				1994	✓									No	New Site ID and Determined not to be an Inactive Waste Site	
TSF-44	Track 1	TSF Diesel Fuel Pipeline Leak NW of TAN-604				1995	✓						✓				No	New Site ID; Tr-1 Complete
	No Action	Broken Pipe in Berm East of TAN-633				1995	✓										No	New Site ID and Determined not to be an Inactive Waste Site
TSF-45	No Action	Buried Asbestos behind the Hanger at SMC				1995	✓										No	New Site ID and Determined not to be an Inactive Waste Site
	Track 1	TSF Buried Construction Debris Near the TAN Gravel Pit	1995	✓										No	New Site ID; Tr-1 Complete			
OU 1-01 Total = 13	WAG 1 Haz Waste Sites		IET-05	Track 1	IET Foam Stabilizer Tank (TAN-317)	1992-93	✓								No	Tank has been removed as part of UST Program.		
			IET-06	Track 1	IET Injection Well (TAN-332)	1992-93	✓								No	No contamination in GrdWtr. Likely NFA		
			LOFT-03	Track 1	LOFT Rubble PHS of LOFT Disposal Pond	1992-93	✓									No	Removed as part of OU 1-08 Tr-2; Completed	
			LOFT-07	Track 1	LOFT Foam Solution Tank (TAN-119)	1992-93	✓									No	Removed as a maintenance action.	
			LOFT-11	Track 1	LOFT Oxygen Pits (3) E of TAN-629	1992-93	✓									No	Tank has been removed as part of UST Program	
			LOFT-14	Track 1	LOFT Asbestos Piping	1992-93	✓									No	Removed as part of OU 1-08 Tr-2; in OU 1-10 RI/FS	
			LOFT-15	Track 1	LOFT Buried Asbestos Pit	1992-93	✓									No		
			TSF-01	Track 1	TSF Diesel Tank (3,000 gal.) W of TAN-607 & Fuel Spill	1992-93	✓										No	
			TSF-04	Track 1	TSF Gravel Pit/Acid Pit	1992-93	✓										No	
			TSF-11	Track 1	TSF Three Clarifier Pits E of TAN-604	1992-93	✓										No	
			TSF-36	Track 1	TSF Trainite (Asbestos) Contamination	1992-93	✓										No	
			TSF-42	Track 1	TAN-607-A Room 161 Contaminated Pipe	1992-93	✓										No	
			TSF-43	Track 1	RPSA Building 647/648 and Pads	1992-93	✓										No	
			OU 1-02 Total = 17 (continued on next page)	WAG 1 Tank Sites		IET-01	Track 1	IET Gasoline Storage Tank (TAN-318)	1992-93	✓								No
IET-09	Track 1	IET Lube Oil Tank (TAN-316)				1992-93	✓								No	Tank has been removed as part of UST Program		
IET-10	Track 1	IET Diesel Oil Tank (TAN-314)				1992-93	✓								No	Tank has been removed as part of UST Program		
IET-11	Track 1	IET Heating Fuel Tank (TAN-315)				1992-93	✓									No	Tank has been removed as part of UST Program	
LOFT-05	Track 1	LOFT Two Fuel Tanks (TAN-109 A&B)				1992-93	✓									No	Tanks have been emptied; remain in place. Likely NFA	
LOFT-06	Track 1	LOFT Shop Tank E of TAN-631				1992-93	✓									No	Tank could not be located; presumed removed.	
LOFT-08	Track 1	LOFT Tank in Borrow Pits (TAN-110)				1992-93	✓									No	Tank has been removed as part of UST Program	
TSF-13	Track 1	TSF Gasoline Tank N of TAN-610				1992-93	✓									No	Tank has been removed as part of UST Program	
TSF-14	Track 1	TSF Fuel Oil Tank NW of TAN-603				1992-93	✓									No	Tank has been removed as part of UST Program	
TSF-15	Track 1	TSF Fuel Tank W of TAN-603				1992-93	✓									No	Tank has been removed as part of UST Program	
TSF-24	Track 1	TSF Fuel Oil Tank Under SW Corner of TAN-607				1992-93	✓										No	Tank has been removed as part of UST Program

Table 1-1. (continued).

OPERABLE UNIT (continued)	OPERABLE UNIT NAME	Focus Group	SITE NUMBER	FFACO ACTION	SITE NAME	PROJECT YEARS	Action	Tr-1	Tr-2	IA	RIFMS SOW	RIFMS WP	RIFMS wBIRA	PP/ ROD	Further Action	Comments		
OU 1-02			TSF-25	Track 1	TSF Oil Sumps (TAN-608)	1992-93	✓	✓						✓	No	Tank remains in place. Likely NFA		
			TSF-32	Track 1	TSF Oil Tank S of TAN-601	1992-93	✓	✓							✓	No	Tank could not be located; presumed removed. Likely NFA	
			TSF-33	Track 1	TSF T-11 Fuel Tank E of TAN-602	1992-93	✓	✓							✓	No	Tank has been removed as part of UST Program	
			WRRTF-09	Track 1	WRRTF Diesel Fuel Tank (TAN103)	1992-93	✓	✓							✓	No	Tank has been removed as part of UST Program	
			WRRTF-10	Track 1	WRRTF Gasoline Tank (TAN-644)	1992-93	✓	✓							✓	No	Tank has been removed as part of UST Program	
OU 1-03	WAG 1 Hydrocarbon		WRRTF-12	Track 1	WRRTF Diesel Fuel Tank (TAN-1706)	1992-93	✓	✓						✓	No	Tank has been removed as part of UST Program		
			TSF-02	Track 2	TSF Service Station Spill (TAN-664)	1992-93	✓	✓							✓	No	In OU 1-10 RIFFS	
			TSF-03	Track 2	TSF Burn Pit	1992-93	✓	✓							✓	No	Completed as CERCLA Removal Action FY 94.	
			TSF-36	Track 2	TSF Bottle Site	1992-93	✓	✓							✓	No	In OU 1-10 RIFFS	
			WRRTF-01	Track 2	WRRTF Burn Pits	1992-93	✓	✓							✓	No		
OU 1-04	WAG 1 Causal Contamination Sites		LOFT-02	Track 2	LOFT Disposal Pond (TAN-750)	1992-94	✓	✓						✓	No	One tank removed, the 2nd tank emptied, filled with sand, abandoned in place.		
			TSF-12	Track 2	TSF Acid Neutralization Sump N of TAN-602	1992-94	✓	✓							✓	No	Removed; No contamination in soil.	
			TSF-17	Track 2	TSF Two Acid Neutralization Pits N of TAN-649	1992-94	✓	✓							✓	No	Tank empty; abandoned in place.	
			TSF-19	Track 2	TSF Cautics Tank V-4 S of TAN-616	1992-94	✓	✓							✓	No	Removed; No contamination in soil.	
			TSF-20	Track 2	TSF Two Neutralization Pits N of TAN-607	1992-94	✓	✓							✓	Yes	In OU 1-10 RIFFS	
OU 1-05	WAG 1 Radioactive Contamination Sites		TSF-29	Track 2	TSF Acid Pond (TAN-735)	1992-94	✓	✓						✓	No			
			TSF-31	Track 2	TSF Acid Pit W of TAN-647	1992-94	✓	✓							✓	No		
			LET-04	Track 2	LET Stack Bubble Site	1992-94	✓	✓							✓	No	Debris buried; left in place. Likely NFA	
			LET-07	Track 2	LET Hot Waste Tank (TAN-319)	1992-94	✓	✓							✓	Yes	Removed; no contamination in soil.	
			TSF-06	Track 2	TSF TAN/TSF-1 Area (Soil Area)	1992-94	✓	✓							✓	Yes	Some soil removed in 10-06. Also in OU 1-10 RIFFS	
OU 1-06	WAG 1 Former Land Disposal Unit Sites		TSF-09	Track 2	TSF Intermediate-Level (Radioactive) Waste Disposal System	1992-94	✓	✓						✓	Yes	In OU 1-10 RIFFS		
			TSF-10	Track 2	TSF Drainage Pond (TAN-782)	1992-94	✓	✓							✓	Yes	In OU 1-10 RIFFS	
			TSF-18	Track 2	TSF Contaminated Tank SE of Tank V-3	1992-94	✓	✓							✓	Yes	In OU 1-10 RIFFS	
			TSF-21	Track 2	TSF IET Valve Pit	1992-94	✓	✓							✓	Yes	In OU 1-10 RIFFS	
			TSF-26	Track 2	TSF PM-2A Tanks (TAN-710 A&B)	1992-94	✓	✓							✓	Yes	Soil in OU 10-06 RIFFS. Tanks in 1-10 RIFFS	
OU 1-07	WAG 1 Former Land Disposal Unit Sites		WRRTF-04	Track 2	WRRTF Radioactive Liquid Waste Tank (TAN-735)	1992-94	✓	✓						✓	No	Tank removed; No contamination in soil.		
			LOFT-01	Track 1	LOFT Diesel Fuel Spills (TAN-629)	1992-93	✓	✓							✓	No		
			LOFT-10	Track 1	LOFT Sulfuric Acid Spill (TAN-771)	1992-93	✓	✓							✓	No	In OU 1-10 RIFFS	
			TSF-07	Track 1	TSF Disposal Pond	1992-93	✓	✓							✓	Yes	Removed as part of CERCLA Removal Action. Likely NFA	
			TSF-08	Track 1	TSF HTR E Mercury Spill Area	1992-93	✓	✓							✓	No	Ground Water Treatment Facility operated in 1994 as part of IA. In OU 1-10 RIFFS	
OU 1-07A	TSF Injection Well		TSF-05	IA	TSF Injection Well	1990-92	✓	✓						✓				
			TSF-23	IA	TSF Drinking Water Potential Contamination	1990-92	✓	✓							✓			
			TSF-05	RIFFS	TSF Injection Well	1992-94	✓	✓							✓			
			TSF-23	RIFFS	TSF Drinking Water Potential Contamination	1992-94	✓	✓							✓			
			TSF-22	Track 2	TSF Railroad Turntable	1993-95	✓	✓							✓			
OU 1-08	WAG 1 Miscellaneous Track 2 Sites		TSF-28	Track 2	TSF Sewage Treatment Plant and Sludge Drying Beds	1993-95	✓	✓						✓	No	In OU 1-10 RIFFS		
			WRRTF-05	Track 2	WRRTF Injection Well	1993-95	✓	✓							✓	No	No contamination in soil.	
			WRRTF-13	Track 2	WRRTF Fuel Oil Leak	1993-95	✓	✓							✓	No	In OU 1-10 RIFFS	
			TSF-36	Track 1	TSF TAN-603 French Drain	1992-93	✓	✓							✓	Yes	Removed in Nov. 1994. Metals in soil. In OU 1-10 RIFFS	
			TSF-37	Track 1	TSF Contaminated Well Water Spill	1992-93	✓	✓							✓	No	No contamination in soil.	
OU 1-09	WAG 1 Soil Contamination		WRRTF-02	Track 1	WRRTF Two Phase Pond (TAN-763)	1992-93	✓	✓						✓	No	No contamination in soil.		
			WRRTF-03	Track 1	WRRTF Evaporation Pond (TAN-762)	1992-93	✓	✓							✓	No	No contamination in soil.	
			WRRTF-06	Track 1	WRRTF Sewage Lagoon	1992-93	✓	✓							✓	No	No contamination in soil.	
			TSF-27	RIFFS	TSF Paint Shop Drain	1995-1999	✓	✓							✓	Yes	OU 1-10 Comp RIFFS in progress	
			TSF-27	RIFFS	TSF Paint Shop Drain	1995-1999	✓	✓							✓	No	OU 1-10 RIFFS	
OU 1-10	WAG 1 Comprehensive RIFFS		Planned		DOE review complete											64 sites total. Tr 1 - 43, 43 signed		
			In progress		EPAD/DHW review complete												79 1991 FFA.	
			LIMITCO review complete		Complete													15 are new sites. Tr2s - 24 sites, All completed. IAs - 1 complete.
			Consent Order and Compliance Agreement		LOFT													RIFFS - 2; 1 complete, 1 in progress
			No Further Action		SMC													
OU 1-10	WAG 1 Comprehensive RIFFS		Initial Engine Test facility		Technical Support Facility													
					Specific Manufacturing Capability facility													
					Loft-of-Fluid Test facility													
					WRRTF Water Reactor Research Test Facility													
					RIPSSA Radioactive Parts Security Storage Area													

NOTE: There is no IET-03, WRRTF-08 or WRRTF-11.

Summary:
 64 sites total. Tr 1 - 43, 43 signed
 79 1991 FFA.
 15 are new sites. Tr2s - 24 sites, All completed.
 IAs - 1 complete.
 RIFFS - 2; 1 complete, 1 in progress

6. Develop and evaluate the appropriate remedial alternatives based on the nine Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) criteria.

The first objective was addressed in the RI/FS Work Plan. Attachment I of the work plan documents the screening and data gap analysis (SDGA) of WAG 1 sites that was performed. The SDGA screened sites and contaminants and identified data gaps to be filled during the performance of the RI. Additionally, a screening level ecological risk assessment (SLERA), Attachment VIII of the work plan, was performed. The second, third, and fourth objectives are addressed in this, RI/BRA, which will be compiled into the comprehensive TAN RI/FS. The fifth and sixth objectives will be addressed in the FS, which also will be compiled into the comprehensive TAN RI/FS.

1.2 Site Background

The INEEL is a U.S. government-owned test site managed by the Department of Energy (DOE). The INEEL Site has been devoted to nuclear energy research and related activities since it was established in 1949, when it was established as the National Reactor Testing Station (NRTS) by the U.S. Atomic Energy Commission (AEC). The NRTS provided an isolated area in which nuclear reactors and support facilities could be built and tested. In 1974, the NRTS was redesignated as the Idaho National Engineering Laboratory (INEL) to reflect the broad scope of engineering activities taking place. In 1997, the laboratory was again renamed to the Idaho National Engineering and Environmental Laboratory (INEEL) to reflect an expanded mission that also includes the environmental management of a number of Resource Conservation and Recovery Act (RCRA) and CERCLA sites.

Most of the INEEL facilities are currently operated by one of three government contractors: Lockheed Martin Idaho Technologies Company (LMITCO); Westinghouse Electric Corporation; and Argonne National Laboratory-West (ANL-W). These contractors conduct various programs at the INEEL under the direction of three offices: DOE-ID, the Department of Defense-Pittsburgh Naval Reactors Office, and the DOE Chicago Operations Office. DOE-ID has responsibility for the INEEL and delegates the authority to operate the Site to the government contractors.

LMITCO, the prime operating contractor and the Site services contractor for the INEEL, provides a variety of programmatic and support services related to nuclear reactor design and development, nonnuclear energy development, materials testing and evaluation, operational safety, environmental restoration, and radioactive waste management.

1.2.1 INEEL Description

The INEEL Site occupies approximately 2,300 km² (890 mi²) of the northwestern portion of the Eastern Snake River Plain (ESRP) in southeast Idaho. The site is nearly 63 km (39 mi) long from north to south and about 58 km (36 mi) wide at its broadest on the southern boundary. The INEEL includes portions of five Idaho counties (Bingham, Bonneville, Butte, Clark, and Jefferson) and lies within Townships 2 to 8 N and Ranges 28 to 34 E, Boise baseline and meridian. Figure 1-5 illustrates the INEEL configuration and some of its major facilities.

The surface of the INEEL is a relatively flat, semiarid, sagebrush desert, with predominant relief being manifested either as volcanic buttes jutting up from the desert floor or as unevenly surfaced basalt flows or flow vents and fissures. Elevations on the INEEL range from 6,572 ft in the southeast to 4,750 ft in the central lowlands, with an average elevation of 4,975 ft.

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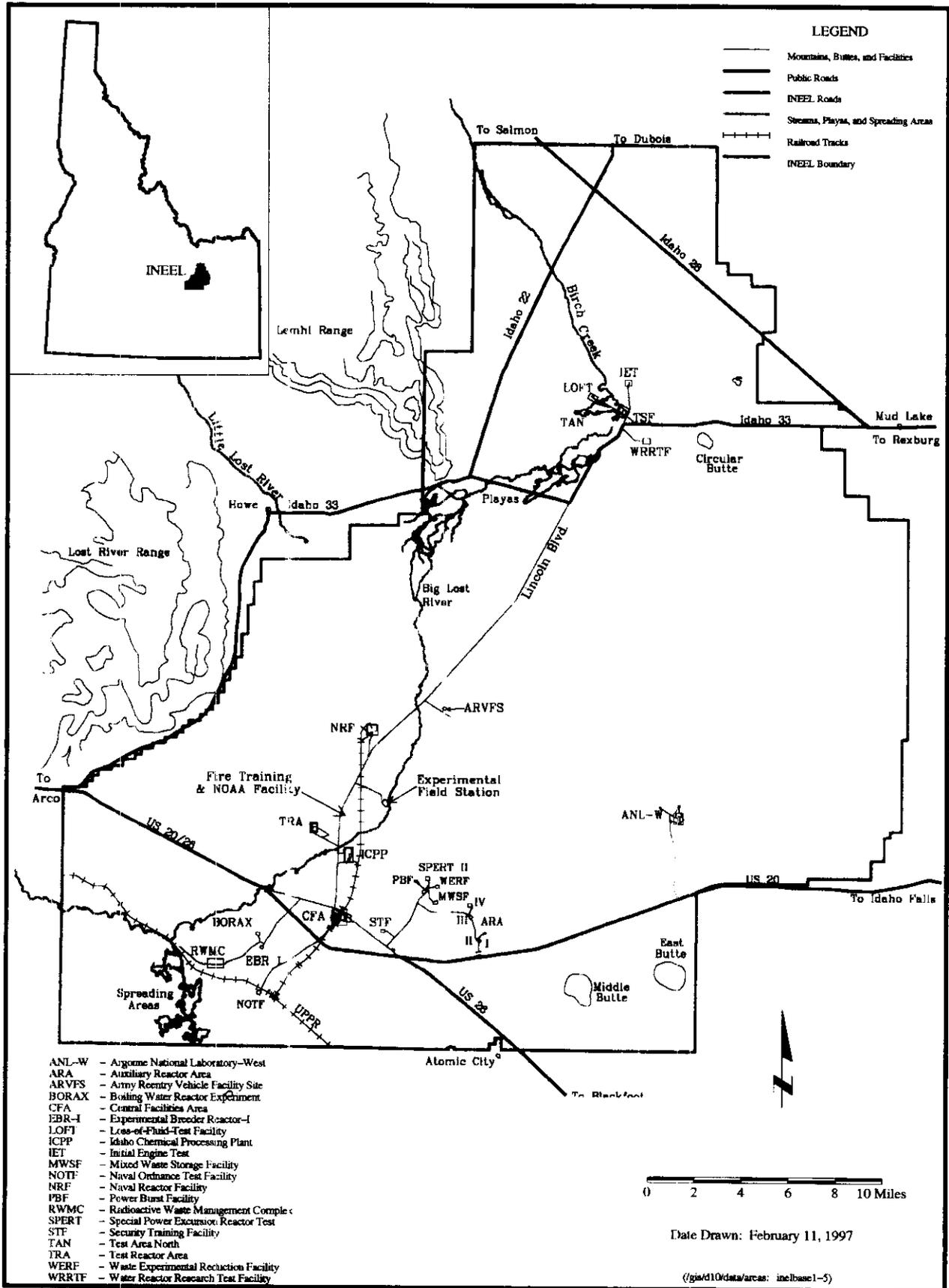


Figure 1-5. The INEEL site map showing major facilities.

1.2.2 TAN History

TAN is located in the north-central portion of the INEEL. TAN was constructed between 1954 and 1961 to support the Aircraft Nuclear Propulsion (ANP) Program sponsored by the Air Force and the U.S. AEC. The mission of the ANP Program was to test the concept of the nuclear-powered airplane. The program was involved in testing of three versions of a full-scale, nuclear-powered aircraft engine until 1961 when the program was canceled by Congress. From 1962 until the 1970s, the TAN Hot Shop and hot cells, which are support facilities for the TSF, were devoted principally to the Loss-of-Fluid Test Facility (LOFT) and miscellaneous minor examinations and tests for the Test Reactor Area (TRA) and the Power Burst Facility (PBF). Beginning in 1980, the TAN Hot Shop and hot cells supported research and development of material from the Three-Mile Island (TMI)-2 reactor as a result of the 1979 accident at the reactor. During the mid-1980s, the final tests for the LOFT Program were supported by the Hot Shop.

As discussed in an investigation of TAN groundwater in Kaminsky et al. (1993), only minor activities are performed at the Initial Engine Test (IET) Facility, LOFT, and the Water Reactor Research Test Facility (WRRTF). A brief history of activities conducted at these facilities follows:

- **LOFT**—The LOFT was a scaled duplicate of a pressurized light water reactor designed to perform loss-of-coolant safety testing and behavior studies, and was used to develop and verify sophisticated computer codes to predict reactor behavior during severe accident scenarios. The facility has been decontaminated, but was used in the late 1980s and early 1990 for decontamination and decommissioning (D&D) of the reactors from the ANP Program.
- **IET**—The IET includes buildings and structures constructed for the ANP Program during the 1950s. After the ANP Program, the IET was used for the System for Nuclear Auxiliary Power Transients Program (SNAPTRAN) in the early 1960s and the Hallam D&D Project in 1977 and 1978. This area is not decontaminated and has been decommissioned since 1979.
- **WRRTF**—The first facilities at WRRTF were built in the late 1950s, and were used to experiment with pool and table reactors. These reactors were decontaminated and decommissioned in the early 1960s, and a new reactor, the Experimental Beryllium Oxide Reactor (EBOR), was constructed. Although fuel was loaded into the reactor, the reactor was never started and was later decommissioned. In the mid-1960s, the Semiscale Project was undertaken. This was a nonnuclear program designed to emulate, on a small scale, the principal features of a commercial nuclear reactor, to predict the events during a loss-of-coolant accident and other transients.

WRRTF also contains the Blowdown Facility, which provided a simulated environment of a pressurized water reactor to test instrument and component behavior, and the Full Area Steady State Testing Facility, which was used to test newly developed instrumentation for reliability and calibration. All of these nonnuclear facilities were used to support the LOFT Program and are now deactivated.

1.2.3 Previous Investigations

WAG 1 is divided into 10 OUs consisting of 94 potential release sites. Summary assessments, Track 1 or Track 2, or both and an RI have been completed for all of the potential release sites. These include the no action sites identified in the FFA/CO and any new sites identified after the FFA/CO was

signed. The sites include various types of pits, numerous spills, ponds, above ground and underground storage tanks, and a railroad turntable. Contaminants of potential concern include organic compounds, radionuclides, petroleum waste, heavy metals, laboratory waste, and mixed waste. Table 1-2 provides a brief site description by OU. Also included in Table 1-2 are sites designated as “None” and “New Sites.” As noted in Table 1-2, a site designated as “None” means that it was a site identified as no action in the FFA/CO. Generally, these sites were originally designated as potential release sites in the Consent Order code. Assignment of a site code indicates a Track 1 is needed and depends on the outcome of the site inspection. As indicated on Table 1-2, a “New Site” designation means the site was identified after the FFA/CO was signed.

1.3 Report Organization

The organization of this report generally follows the suggested format provided in the *Guidance for Conducting Remedial Investigations and Feasibility Studies Under CERCLA*, (EPA 1988). This report is a summary report, and is designed to supplement previous reports by providing new information gained during the field investigation for the unevaluated and newly identified sites, and providing the results of the comprehensive baseline risk assessment (BRA).

Section 1 provides a history of TAN and brief descriptions of the facility and of previous investigations up to the completion of this Comprehensive RI/BRA. Section 2 provides information on the physical setting of TAN.

Section 3 discusses the results of the OU 1-10 RI and the contaminants of concern for each of the sites included in the RI/BRA. Section 4 presents the site summaries and the nature and extent of contamination at each site.

Section 5 discusses any deviation from the OU 1-10 Work Plan during the RI. Section 6 presents the BRA, both for individual sites and a comprehensive risk assessment for the entire WAG. Section 7 presents the ecological risk evaluation for WAG 1.

Section 8 summarizes the lessons learned during preparation of this RI/BRA and presents risk management considerations and conclusions based on the comprehensive evaluation of the RI/BRA and sampling data.

Sections 9 through 12 represent the FS of those sites that were retained in the RI/BRA. Section 9 discusses the overall scope and format of the FS including the Remedial Action Objectives (RAOs), the potential applicable or relevant and appropriate requirements (ARARs), the general response actions (GRAs), and the preliminary remediation goals (PRGs). Section 10 discusses the identification and screening of technologies and Section 11 discusses the development of alternative actions. Section 12 provides a detailed analysis of those alternatives.

Appendices A through J include a summary of the OU 1-10 field sampling data, documentation to support the human health, and ecological risk assessments and a guide to the location of information required for a Natural Resources Damage Preassessment Screening.

Table 1-2. Summary of all potential release sites within WAG 1. ^{a,b}

OU	Subunit	Site name	Description
None	IET-02	IET burial pit northeast of IET	The IET-02 burn pit was used for the disposal and burning of debris from areas around the IET facility. IET-02 is located approximately 0.5 mi northeast of the IET complex. The pit was constructed in the early 1960s. Assessment documentation indicates that no hazardous materials had been disposed of and no environmental damage was evident from site observation. IET-02 was removed from the list of potential hazardous waste disposal sites in the FFA/CO.
None	IET-08	IET septic tank and filter bed	The IET-08 facility septic tank and filter bed is located approximately 15 ft southwest of TAN 626. It was installed in 1953 and was used through 1978. The septic tank and filter bed structure are buried 5 ft belowground surface (bgs) and an estimated 1.44 yd ³ of sludge and liquid remain in the septic tank. Cs-137, U-238, and Sr-90 were detected in sludge samples from the tank; however, neither of the liquid samples from the septic tank showed detectable levels of radioactivity. The levels observed are below risk based levels. The primary use of the septic system was to partially treat neutralized water softener and sanitary wastewaters prior to discharge to the IET-06 disposal well. IET-08 was removed from the list of potential hazardous waste disposal sites in the FFA/CO.
None	LOFT-04	LOFT injection well	LOFT-04 was constructed in 1957 and designed for disposal of noncontaminated or cold wastewater resulting from LOFT operations. No evidence to the contrary exists. LOFT-04 was removed from the list of potential hazardous waste disposal sites in the FFA/CO.
None	LOFT-09	LOFT septic tank and drain field	The LOFT-09 septic tank and tile drain field system consists of a 4,000-gal septic tank and drain field located east of the main LOFT facility. When the system was active, the septic tank received sanitary waste from several TAN buildings. Nothing but domestic sanitary waste had ever entered the septic system and there was no evidence of historical or threatened release. LOFT-09 was removed from the list of potential hazardous waste disposal sites in the FFA/CO.
None	LOFT-13	LOFT dry well	The LOFT-13 dry well is located northeast of the LOFT complex. The well was an empty well, approximately 3 ft long, 3 ft wide, and 6 ft deep. No connecting lines to the well were observed. In August 1991, the well was backfilled and the area was surveyed for volatile organic compounds (VOCs) and radioactivity. LOFT-13 was removed from the list of potential hazardous waste disposal sites in the FFA/CO.
None	SMC-01	Specific Manufacturing Capability (SMC) septic tank and drain field	SMC-01 consists of two 6,000-gal concrete septic tanks, each of which is connected to a 1,200-gal concrete dosing tank that feeds a drain field. The initial assessment indicates that no hazardous or radioactive materials are associated with the system. The SMC sanitary system was removed from the list of potential hazardous waste disposal sites in the FFA/CO.
None	TSF-16	TSF brine pit north of TAN-608	The TSF-16 site is a covered, concrete pit that stored sodium chloride solution for regenerating the water softener in the demineralized water system. It has a holding capacity of about 6,000 gal. Findings from the summary assessment indicate that the TSF-16 brine pit waste is nonhazardous and that no known evidence of any historical or threatened releases. The TSF-16 brine pit was removed from the list of potential hazardous waste disposal sites in the FFA/CO.

Table 1-2. (continued).

OU	Subunit	Site name	Description
None	TSF-30	TSF septic tank east of TAN-602	The TSF Septic Tank had a capacity of approximately 500 gal. The system was used for the treatment of sanitary waste. There is no evidence of hazardous waste disposal at this site. The system was removed from the list of potential hazardous waste disposal sites in the FFA/CO.
None	TSF-34	Fuel tank south of TAN-607	TSF-34 refers to a 3,000-gal fuel tank that was located under the southwest corner of Building TAN-607. According to engineering drawings, the TSF-34 fuel tank was installed after August 1954 and removed by February 1958. The tank possibly contained waste fuel from the static testing of jet engines. A 1991 search for the tank using sub-surface radar and a metal detector provided no evidence that the tank was still in place. There is no evidence that any historical or threatened releases of hazardous substances, pollutants, or contaminants from TSF-34 present a danger to public health or the environment. Therefore, the TSF-34 site is classified as a no action Site in accordance with documentation in the Administrative Record.
None	TSF-35	Acid sump southeast of TAN-609	The TSF-35 site is an acid sump and drain pit located 12 ft southeast of TAN-609. The acid sump and drain pit are buried at least 5 ft belowgrade. This sump and pit were installed in the late 1960s to accommodate lead acid battery testing associated with the LOFT Semi-Scale Program from 1967 to 1973. Interviews with the then battery maintenance supervisor indicate that no acid was ever discharged to the sump. From 1976 to 1980 the building was used for botanical experiments. Anecdotal information indicated that the only wastewater to enter the sump was water from the botanical experiments and snow melt from vehicles brought into TAN-609 for maintenance activities. Therefore, this site is classified as a no action Site in accordance with documentation in the Administrative Record.
None	TSF-40	Rubble pile near TAN	The TSF-40 site includes rubble piles located southwest of the WRRTF. The rubble piles primarily consist of lava rock and concrete from construction of the WRRTF and facilities for programs that preceded WRRTF. Concrete rubble and other types of construction material were also disposed of at this site. An asbestos cleanup was performed in 1989 and there is no evidence that any historical or threatened releases of hazardous substances, pollutants, or contaminants from TSF-40 present a danger to public health or the environment. Therefore, the TSF-40 site is classified as a no action Site in accordance with documentation in the Administrative Record.
None	TSF-41	Scrap yard south	The TSF-41 scrap yard is located south of the TSF at TAN. It was used between approximately 1965 and 1976 to store or dispose of scrap materials such as metal parts, batteries, and asbestos-containing material. Most of the batteries were removed by scrap dealers and an asbestos clean-up was performed in 1989. There is no evidence that any historical or threatened releases of hazardous substances, pollutants, or contaminants from TSF-41 present a danger to public health or the environment. Therefore, the TSF-41 site is classified as a no action Site in accordance with documentation in the Administrative Record.
None	WRRTF-07	WRRTF septic tank and sand filters	WRRTF-07 is located south of the main WRRTF complex and consists of a septic tank and sand filters that are used to treat sanitary waste. The only known waste discharged to the system was from building toilets and wash sinks. Process waste went only to the disposal well (WRRTF-05) and the evaporation pond (WRRTF-03). WRRTF-07 was removed from the list of potential hazardous waste disposal sites in the FFA/CO because no hazardous or radioactive materials are associated with the system.

Table 1-2. (continued)

OU	Subunit	Site name	Description
1-01	IET-05	IET foam stabilizer tank	IET-05 is a former 550-gal underground storage tank (UST) used for storage of fire-fighting foam (a biodegradable and nonhazardous material only) from 1958 to 1961. The storage tank and its associated piping were removed in 1990. There were no holes in either the tank or the associated piping, and no visually stained or discolored soil was observed in the tank excavation.
1-01	IET-06	IET Injection Well	IET-06 is the IET facility injection well located approximately 33 m (100 ft) southeast of the septic tank and sand filter bed (IET-08). The injection well was drilled in 1953 to discharge treated sanitary sewage and process wastewater from the IET facility and had a total depth of 108 m (329 ft). The well was converted to a monitoring well in 1980 and a pump was installed in 1982.
1-01	LOFT-03	LOFT rubble pit south of LOFT disposal pond	LOFT-03 was used on an irregular basis for surface disposal of construction debris such as concrete, metal, and wood from the late 1960s to the early 1970s. Most of the construction debris was removed in 1987 or 1988. The remaining debris was removed in 1991 and disposed of at the Central Facilities Area (CFA) landfill.
1-01	LOFT-07	LOFT foam solution tank	LOFT-07 is the site of a former foam solution tank located approximately 0.3 m (10 ft) north of building TAN-630. The firefighting suppressant in the tank was a protein-based product containing foam enhancers and a biocide.
1-01	LOFT-11	LOFT cryogen pits (3) east of TAN-629	LOFT-11 is the site of three former concrete pits that were constructed in 1963. The pits were intended for the disposal of liquid nitrogen that was to be used as a coolant during the Liquid Cooled Reactor Experiment. The experiment was canceled in 1967 before the pits were ever used. Available site engineering drawings and records document the planned use and subsequent backfilling of the pits. The site is currently covered by the concrete floor of Building TAN-629.
1-01	LOFT-14	LOFT asbestos piping	LOFT-14 was an abandoned metal pipe covered with asbestos insulation lying exposed on the ground. In July 1991, all the asbestos was removed from the pipe, packaged, and disposed of in the asbestos area at the CFA landfill. The metal pipe and the underlying soil were also disposed of at the CFA landfill.
1-01	LOFT-15	LOFT buried asbestos pit	LOFT-15 is the former site of a construction materials burn pit used from as early as 1957 to as late as 1979. The construction debris was most likely concrete, metal, and wood, and was disposed of and burned on an irregular basis. The pit was abandoned in 1979 and was covered with 2 to 4 ft of soil. Most of the debris was removed in 1992 and was disposed of at the CFA landfill.
1-01	TSF-01	TSF diesel tank west of TAN-607 and fuel spill	TSF-01 is a former 3,000-gal diesel fuel tank installed in 1953 and last used in 1985. A pipe leak in 1983 reportedly released approximately 500 gal of diesel fuel into the surrounding soil. The pipe was replaced in 1983. The tank, its contents, and the associated piping were then removed in September 1991. No holes were observed in the tank or the associated new piping during the excavation. Approximately 96 yd ³ of contaminated soil were removed from the site.
1-01	TSF-04	TSF gravel pit/acid pit	TSF-04 is located in a former gravel pit used for disposal of construction debris such as concrete, metal, and wood from the 1950s to the mid 1970s. According to personnel interviews, the only hazardous material or waste disposed of in this area was one 55-gal drum of sulfuric acid sometime between 1958 and 1959.

Table 1-2. (continued).

OU	Subunit	Site name	Description
1-01	TSF-11	TSF three clarifier pits east of TAN-604	The TSF-11 clarifier pits were located approximately 0.9 m (3 ft) east of building TAN-604. The clarifier pits consisted of three concrete basins with a total combined capacity of approximately 3,175 L (840 gal). It is believed that the clarifier pits received wastewaters containing paint and paint thinners from the paint room between 1957 and 1985. The clarifier pits were removed in May 1994.
1-01	TSF-39	TSF transit (asbestos) contamination	TSF-39 is an area that contains small pieces of asbestos cement (Transit) and is believed to be the result of the construction activities for LOFT. Field inspections have determined that the asbestos material is encapsulated in cement and is not likely to be released.
1-01	TSF-42	TAN-607-A Room 161 contaminated pipe	TSF-42 is the site of a 15.2-cm (6-in.) diameter pipe internally contaminated with radioactive material. The pipe is surrounded by concrete and is located under the floor of Room 161 in TAN-607-A, thus the contamination is "fixed." The TSF-42 pipe became internally contaminated as a result of discharging contaminated wastewaters from cleaning processes. Operating records for TAN-607 indicate decontamination and cleaning activities began in the late 1950s and were completed by 1984.
1-01	TSF-43	Radioactive Parts Security Storage Area (RPSSA) Buildings 647/648 and Pads	TSF-43 consists of the RPSSA buildings TAN-647 and TAN-648, and the concrete and asphalt pads surrounding the buildings. TSF-43 is located in the northwest corner of the TSF. The buildings and surrounding pads are in a fenced controlled access area. Current operational activities allow the storage of hazardous, classified, nonhazardous, and radioactive and radioactively contaminated items in TAN-647/648 or on the adjacent storage pads. The TAN-647 building is an interim status storage unit for certain hazardous wastes under the INEEL RCRA Interim Status program. TSF-43 has been partially decontaminated many times in the past. The contaminated surface areas at TSF-43 were paved with asphalt in June and July 1993 as part of a TAN facilities project to upgrade the roads in the RPSSA area. This effort stopped the spread of contamination from the pads into the surrounding soil and eliminates exposure to current or future workers. The soil below and surrounding the buildings and pads is part of site TSF-06.
1-02	IET-01	IET gasoline storage tank	IET-01 is a former 5,000-gal gasoline tank installed in 1958 and last used in 1965. The tank contents were removed in September 1991. The tank and the associated piping were removed in August 1992. There were no holes in either the tank or the associated piping, and no visually stained or discolored soil was observed in the tank excavation.
1-02	IET-09	IET lube oil tank	IET-09 is a former 550-gal lube oil tank installed in 1958 and last used in 1960. Sample analyses of the tank contents detected typical petroleum constituents and elevated levels of barium. The tank contents were removed in September 1991 and disposed of as a hazardous waste. The tank and the associated piping were removed in October 1991.
1-02	IET-10	IET diesel fuel tank	IET-10 is a former 30,000-gal underground tank used for storage of diesel fuel from 1957 to 1989. Removal of the storage tank, its contents, and the associated piping were completed in 1990.
1-02	IET-11	IET heating oil tank	IET-11 is a former 20,000-gal underground tank used for storage of diesel fuel from 1957 to 1989. Removal of the storage tank, its contents, and the associated piping were completed in 1990.
1-02	LOFT-05	LOFT two fuel tanks	LOFT-05 is the site of two 35,000-gal underground tanks used for storage of heating oil from the mid 1950s to 1991. The tank contents were removed in 1991. However, the tanks and associated piping remain in place pending future use.

Table 1-2. (continued).

OU	Subunit	Site name	Description
1-02	LOFT-06	LOFT slop tank east of TAN-631	LOFT-06 is a former 2,000-gal underground tank used from 1958 to 1963. The tank was designed to store waste jet fuel and diesel-contaminated wastewater. However, all available information indicates the tank was only used for diesel-contaminated wastewater. Available drawings and documentation indicate that the tank contents were removed about 1965 and the tank was filled with sand. The site is currently covered by an asphalt road and parking lot.
1-02	LOFT-08	LOFT tank in borrow pits	LOFT-08 is a former 15,000-gal tank installed in 1958 and last used in 1963. Records indicate the tank was intended for storage of potentially radioactively-contaminated petroleum jet fuel, but the project was canceled in 1961 before the jet engines were tested. Therefore, the tanks were likely never used for their intended purpose. In January 1990, the LOFT-03 tank and the associated piping were removed.
1-02	TSF-13	TSF gasoline tank north of TAN-610	TSF-13 is a former 550-gal gasoline tank. Records indicate the tank was installed in the early 1950s to supply a fire-pump engine. The tank and its contents were removed about 1980.
1-02	TSF-14	TSF fuel oil tank northwest of TAN-603	TSF-14 is a former 12,000-gal tank used for the storage of heavy diesel fuel from 1954 to 1975. The tank, its contents, and the associated piping were removed in 1991. Some radioactive soils were present above the tank from another pipe and some diesel-contaminated soil was present below the fill pipe. All soil contamination was removed.
1-02	TSF-15	TSF fuel tank west of TAN-603	TSF-15 is a former 3,000-gal fuel oil tank that contained diesel fuel. Records indicate the tank was installed in 1963 and last used in 1975. The tank, its contents, and the associated piping were removed in August 1990.
1-02	TSF-24	TSF fuel oil tank under southwest corner of TAN-607	TSF-24 is a former 10,000-gal tank planned to store jet engine fuel between 1955 and 1960. The tank, associated piping, and some soil with detectable contamination were removed in September 1990.
1-02	TSF-25	TSF oil sumps east of TAN-609	TSF-25 is an unlined drain sump used to collect waste jet fuel and other products from static engine tests. Records indicate the sump was installed in 1955 to replace a tank that had been removed. The sump was abandoned in 1987 and the floor drain to the sump was filled with concrete. Available drawings and information indicate the sump was used during the ANP Project to collect only waste jet fuel from 1955 to 1961. There is no planned future use for the sump.
1-02	TSF-32	TSF oil tank south of TAN-601	TSF-32 is a former 170-gal tank used to supply heating oil. Records indicate the tank was installed in the mid-1950s and last used in the late 1950s. The tank and associated piping are believed to have been removed sometime between the late 1950s and 1967. The site is currently covered by an asphalt road and parking lot. Geophysical surveys performed in 1990 and 1991 did not locate the tank.
1-02	TSF-33	TSF T-11 fuel tank east of TAN-602	TSF-33 is a former 10,000-gal diesel fuel tank. Records indicate the tank was installed in 1959 and last used in 1960 when the ANP project was terminated. The tank, its contents, and the associated piping were removed in August 1990.
1-02	WRRTF-09	WRRTF diesel fuel tank	WRRTF-09 is a former 2,500-gal diesel fuel tank used to supply an emergency generator. Records indicate the tank was installed in 1962 and last used in 1978. The tank, its contents, and the associated piping were removed in August 1990.

Table 1-2. (continued).

OU	Subunit	Site name	Description
1-02	WRRTF-10	WRRTF gasoline tank	WRRTF-10 is a former 550-gal gasoline tank used to supply an emergency generator. Records indicate the tank was installed in 1955 and last used in 1966. The tank, its contents, and the associated piping were removed in August 1990.
1-02	WRRTF-12	WRRTF diesel fuel tank	WRRTF-12 is a former 1,000-gal diesel fuel tank site used to supply an emergency generator. Records indicate the tank was installed in the late 1950s and last used in 1975. The tank, its contents, the associated piping, and some contaminated soil around the tank were removed in August 1990.
1-03	TSF-02	TSF service station spill	TSF-02 consists of an 822 L (217 gal) gasoline spill occurred in late summer (July, August, or September) 1981. From 1986 to 1987, the INEL Road Program rebuilt and repaved the road in front of TAN-664. The east and west sides of the road were widened 3.0 m (10 ft) and the soil from the TSF-02 spill area was removed. Engineering drawings indicate that 12.7 cm (5 in.) of soil, gravel, and old asphalt paving materials were removed from the former road surface area over the width of the new road. Both the facility maintenance operations involving the road construction and the service station upgrade impacted the 1981 gasoline spill area and the area where gasoline was flushed.
1-03	TSF-03	TSF burn pit	The TSF-03 burn pit is located northwest of Columbia Street gate access, outside the TSF perimeter fence. TSF-03 was potentially used for open burning of combustible waste from 1953 to 1958. The site has been backfilled, subsidence control maintained, and vegetation has been reestablished. The pit received refuse, construction debris, and combustible liquids (i.e., petroleum products) from the TAN area (Meyer, Trippet, and Kaal 1992). It is possible that some oil, Stoddard solvent, and oily waste (from the limited maintenance activities at TAN) were burned at the pit.
1-03	TSF-38	TSF Bottle Site	TSF-38 is the TAN Laboratory Container Disposal Area, a site defined as a rectangle located approximately 91.4 m (300 ft) east of the TAN gravel pit. Within the site are two earth mounds oriented north to south. In May 1991, approximately 15 1-L amber laboratory reagent bottles, five rusted ether cans, and patches of red-stained soil were found lying on the surface. The surface contamination was remediated as part of a cleanup effort by DOE in March 1992. In March 1994 a time-critical CERCLA removal action was initiated to remove any hazardous waste, debris, and contaminated soil present at TSF-38. Between July 18 and July 22, 1994, the TSF-38 Bottle Site Removal Action was performed and included intrusive investigation, field and waste screening, and verification soil sampling.
1-03	WRRTF-01	WRRTF Burn Pits I, II, III, and IV	The WRRTF-01 burn pits are located approximately 823 m (2,700 ft) north of WRRTF-01. These burn pits were used for open burning of combustible waste generated at the TAN Facilities from 1958 to 1975, and involved four separate areas. Burn Pit I opened after the TSF-03 Burn Pit was filled, and received both combustible solids and liquids from 1958 to 1964. Burn Pits II and III were opened after Burn Pit I was filled and operated from 1964 to 1970. Burn Pit II also may have received only combustible solids while Burn Pit III received only combustible liquids. Burn Pit III received petroleum products. Burn Pit IV was opened because Burn Pit II was filled and received mainly combustible solids and some reportedly noncombustible solids (automobiles, metal goods, etc.) Minor amounts of combustible liquids may have been disposed of in Burn Pit IV. No RCRA wastes are suspected of having been disposed of at these sites. The sites have been backfilled and vegetation reestablished; however, at Pits I, II, and IV subsidence control has not been maintained.
1-04	LOFT-02	LOFT disposal pond	LOFT-02 is an unlined disposal pond that has received industrial, cooling, and sanitary wastewater since 1975.

Table 1-2. (continued).

OU	Subunit	Site name	Description
1-04	TSF-12	TSF acid neutralization sump north of TAN-602	TSF-12 consists of two abandoned tanks formerly used to treat acidic effluent from chemistry and metallurgy laboratories prior to discharge to the sanitary sewer system. The tanks operated for less than 3 years, and are not known to have leaked during that period. Preliminary scoping information showed that one tank is filled with sand and covered by a building and the other has been removed.
1-04	TSF-17	TSF two acid neutralization pits north of TAN-649	TSF-17 consists of one tank with two chambers formerly used to treat acidic effluent from a demineralization process. The tank was removed in August 1993.
1-04	TSF-19	TSF caustics Tank V-4 south of TAN-616	TSF-19 is a 15,144-L (4,000-gal) steel tank formerly used to supply NaOH to deionization processes. Historical information indicated that the tank never leaked. Site investigations and field surveys have shown that the tank is empty and that no internal contamination is present. The tank is presently not used, and is buried 3 m (10 ft) deep and partially beneath a building.
1-04	TSF-20	TSF two neutralization pits north of TAN-607	TSF-20 consists of one tank with two chambers formerly used to treat acidic effluent from deionization processes. The tank was removed in October 1993.
1-04	TSF-29	TSF Acid Pond	TSF-29 is an unlined pond that received radioactive and treated process wastewater from 1955 to 1958 in support of the ANP program. The pond was then reoriented and enlarged to receive both the wastewater and surface water until the project was canceled in 1961. The pond was enlarged again in 1967 to receive additional surface runoff water. In 1976 the pond was partially backfilled with soil containing radioactive particles from cleanup operations around the TSF. Site investigations, field surveys, and soil data all show that radioactive contaminants are present in the backfilled soil. The main contaminants of concern are Cs-137, Co-60, and Sr-90. These contaminants are not ubiquitous throughout TSF-29 but rather occur as random, isolated particles in the backfilled soil.
1-04	TSF-31	TSF Acid Pit west of TAN-647	TSF-31 is an unlined trench. Historical reports suggest that the site received acidic waste; however, investigation shows that waste disposal activities have not occurred at the site. Radiation field surveys have not detected any evidence of contamination, and site visits have not shown any evidence of stressed vegetation or stained soil. In addition, a review of aerial photographs through the 1960s through the 1990s reveals no evidence of disposal activities at the site.
1-05	IET-04	IET Stack Rubble Site	IET-04 contains buried rubble from the IET exhaust stack and monitoring vault. These structures were used from 1958 to 1961 to release exhaust from the nuclear jet engine into the atmosphere. The structures were decontaminated and decommissioned in 1986 and 1987 by removing the loose contamination from inside the structures for off-site disposal and then backfilling the structures into a trench. The site currently is buried 4.6 to 6.1 m (15 to 20 ft) bgs.
1-05	IET-07	IET hot waste tank	IET-07 was a stainless steel tank that received radioactive wastewater from the concrete test pad site for the nuclear jet engine. The tank and associated piping were removed in 1985, and no holes or leaks were found in the tank and soil contamination was detected. The former tank site currently is buried 4.6 to 6.1 m (15 to 20 ft) bgs.

Table 1-2. (continued).

OU	Subunit	Site name	Description
1-05	TSF-06	TSF TAN/TSF-01 Area (Soil Area)	TSF-06 is a large, open, soil area with elevated levels of radioactive contamination, which also contains 13 subareas with discrete boundaries and types of contaminants. Historical site data, Track 2 site investigations, field surveys, and soil data show that radioactive contaminants are present in the site soil at Areas 1, 2, 4, 5, 6, 7, 8, 9, 10, and 11. The main contaminants of concern are Cs-137, Co-60, and Sr-90. As a prudent management practice, Areas 13b and 13c were removed to eliminate any ongoing source of mercury contamination.
1-05	TSF-09	TSF Intermediate-Level (Radioactive) Waste Disposal System	TSF-09 consists of three abandoned stainless steel tanks installed about 1957 and used for the treatment, storage, and disposal of radioactive and other liquid wastewater. Historical site data, Track 2 site investigations, field surveys, and soil data show that radioactive contaminants are present in the upper 0.15 m (0.5 ft) of the site soil, likely from loose contamination migrating from the adjacent buildings and rooftops. The main contaminants are Cs-137, Co-60, and Sr-90, and gross alpha. The presence of trichloroethylene and Cs-137 at depth indicates a subsurface source. Currently, the TSF-09 V-tanks and the TSF-18 tank are not believed to be leaking. The contents of these tanks are not included when evaluating this site.
1-05	TSF-10	Drainage pond	TSF-10 is an infiltration pond for surface-water discharge. The preliminary scoping information and historical site investigation with previous soil sample data indicate that no significant contamination is present at the site. Track 2 site investigations show that no waste disposal activities have occurred at the site. Radiation field surveys detected no evidence of contamination, and site visits showed no evidence of stressed vegetation. Metals and low-level radionuclide contamination may be present.
1-05	TSF-18	Contaminated tank southeast of Tank V-3	TSF-18 consists of a single tank used to filter and treat wastewater as a part of the Intermediate-Level (Radioactive) Waste Disposal System (TSF-09). The tank was installed in 1970 and only operated one day before becoming inoperable. Preliminary scoping information and historical site data indicate that the tank is radioactively contaminated and that the soil around TSF-18 is also likely contaminated from processes at TSF-09. Therefore, TSF-18 has been combined with the investigation at TSF-09 because the two sites are contiguous, have similar contamination, and will likely require the same remedial decision.
1-05	TSF-21	TSF IET valve pit	TSF-21 was an at-grade concrete vault containing valves that controlled the flow of wastewater into the Intermediate Level (Radioactive) Waste Disposal System (TSF-09). Preliminary scoping information and historical site data indicated that TSF-21 was radioactively contaminated from past operations, that cracks and leaks existed in the vault, and that at least one spill had occurred where liquid in the valve pit overflowed onto the surrounding soil. The valve pit was removed in November 1993. Residual radionuclide and volatile organic contamination may exist from depths of 17 ft. A borehole placed in the center of the site and sampled from the 17- to 18-ft interval did not reveal elevated contamination, however.
1-05	TSF-26	TSF PM-2A tanks	TSF-26 is a large, open soil area, with elevated levels of radioactive contamination, that also contains two USTs that were used for the treatment storage, and disposal of radioactive and other wastewater. Historical site data, Track 2 site investigations, field surveys, and soil data show that radioactive contaminants are present in the site soil. The main contaminants of concern are Cs-137, Co-60, and Sr-90.
1-05	WRRTF-04	WRRTF radioactive liquid waste tank	WRRTF-04 was a stainless steel tank used to store radioactive wastewater. The tank and associated piping were removed in August 1993. No holes or leaks were detected.

Table 1-2. (continued).

OU	Subunit	Site name	Description
1-06	LOFT-01	LOFT diesel fuel spills	LOFT-01 is the site of several diesel spills that occurred when a diesel tank overflowed during filling between 1982 and 1986. The fuel oil flowed into a culvert and pooled in a ditch. The contaminated soil in the ditch was excavated and removed in 1990.
1-06	LOFT-10	LOFT sulfuric acid spill	LOFT-10 was a 200-gal sulfuric acid spill that occurred in 1983. Approximately 0.5 yd ³ of contaminated soil was excavated and disposed of at that time.
1-06	TSF-07	TSF disposal pond	TSF-07 is an unlined disposal pond located southwest of TSF. The TSF-07 site encompasses an area of approximately 35 acres, of which 5 acres in the northeast corner and on the eastern edge are contaminated with radionuclides and metals. The remaining 30 acres have never received wastewater and are not contaminated based on available field screening data. The TSF-07 pond is surrounded by a 1.5-m (5-ft) tall berm and is unlined. The active portion of the pond consists of a 1.5-acre main pond and a 1-acre overflow pond. The disposal pond replaced the TSF-05 injection well and began receiving wastewater in September 1972. The pond received wastewater from a variety of sources that included sanitary waste discharges, low-level radioactive waste, cold process water, and treated sewage effluent that originated from TAN service buildings and processes. Borated water was also transported from the LOFT facility and poured into a manhole leading into the pond when LOFT was operational. Current discharges to the TSF-07 pond include treated sewage and boiler blowdown, and process wastewater that has been monitored for non-radiological parameters from about 1986 to the present. A section of the pond was partitioned in 1992-1993 for discharge of treated water from the OU 1-07A interim action.
1-06	TSF-08	TSF Heat Transfer Reactor Experiment (HTRE) III mercury spill sites 13B and 13C	Mercury was used extensively at the TSF from the late 1950s to the early 1960s. The HTRE-III, part of the ANP program, used mercury as shielding for its reactor. It is reported that mercury leaked from HTRE-III onto the ground and railroad system every time the unit was moved and that mercury beads were found on the soil near the TAN-647 storage location in the mid-1980s. Also, a large spill of mercury (800 to 1,000 gal) reportedly occurred near the southwest corner of TAN-607 in 1958. Three areas of concern were defined: the original TSF-08 site (13A), and area in front of TAN-607 (13B), and where the tracks intersect Snake Avenue (13C). A removal action was initiated and residual contamination for TSF-08 is limited to Site 13B.
1-07A/B	TSF-05/TSF-23	TSF Injection Well and contaminated groundwater beneath TSF	The TSF-05 injection well was drilled in 1953 to a depth of 93.0 m (305 ft) to dispose of liquid effluent generated from the ANP Program slated to be sited at TAN. TSF-05 is located just south of TAN-655. The TSF-05 injection well has a 30.5-cm (12-in) diameter casing to a depth of 93 m (305 ft) and is perforated from 55 to 74 m (180 to 244 ft) and 82 to 93 m (269 to 305 ft) bgs. The depth to groundwater at this well is approximately 63 m (206 ft) bgs. The well was last used as a primary disposal site in September 1972, after which wastewaters were diverted to the TSF disposal pond. Discharges included treated sanitary sewage, process wastewaters, and low-level radioactive waste streams from TSF-09 and TSF-26. Based on the results of groundwater quality analyses from the injection well, as well as from analytical and radiological analysis of sediment and sludge removed from the well in 1990, the TSF-05 injection well is the primary source of groundwater contaminants at TAN. Since 1988, elevated concentrations of trichloroethylene and other volatile organics have been detected as well as some radionuclides. Groundwater quality data from these past sampling events show trichloroethylene concentrations at the wellhead ranging from 1.6E05 mg/L to 3.5E04 mg/L. Tetrachloroethylene and 1,2-dichloroethylene were also detected at concentrations above drinking water standards.

Table 1-2. (continued).

OU	Subunit	Site name	Description
1-08	TSF-22	TSF railroad turntable	TSF-22 consists of the TAN-705 railroad turntable located in the western portion of the TSF. The turntable is a wooden structure, 27 m (90 ft) in diameter, which is supported by concrete foundation piers. The wooden deck covers a pit, approximately 2.1 m (7 ft) deep, which has a gravel bottom. Contamination present at TSF-22 is attributed to contaminant releases from HTRE dollies or SNAPTRAN equipment onto the turntable or through the wooden planks into the pit below. The contaminants associated with the HTRE dollies and SNAPTRAN program are Hg, Co-60, Cs-137, Sr-90, and U-235. In the 1980s, the 4,029-m ² (2,120-yd ²) wooden planking on the turntable was replaced. A number of radioactive "hot spots" were detected on the original planking. These were removed and disposed of as low-level radioactive waste at the Radioactive Waste Management Complex (RWMC). The remaining planking was disposed of at the CFA landfill. Soil samples collected in 1993 indicate that no contaminants are present above risk-based concentrations.
1-08	TSF-28	TSF Sewage Treatment Plant (STP) and sludge drying beds	TSF-28 is the STP that provides primary and secondary treatment for all TSF sanitary waste. Until 1972, treated effluent from the STP was disposed of in the TSF-05 injection well. Since 1972, the effluent has been routed to a lift station in TAN-655 and pumped to the TSF-07 disposal pond. The sludge that accumulates in the dry beds is periodically (every 2 to 3 years) removed and disposed of either at the CFA landfill or RWMC. In addition to sanitary sewage from buildings at TSF, the waste released to the STP in the past included a number of process waste streams. One of these waste streams included paints, solvents, and thinners from the TAN-604 paint shop, which were treated in the TSF-11 clarifier pits.
1-08	WRRTF-05	WRRTF injection well	The WRRTF injection well is located 84 m (280 ft) south of WRRTF. WRRTF-05, a 94-m (313-ft) deep injection well, was constructed in the late 1950s and first put into service in 1957. According to a construction diagram, the casing is perforated between 57 m (189 ft) and 94 m (313 ft). The WRRTF-05 injection well was used for the disposal of process and sanitary waste from WRRTF facilities. Treated sanitary waste from the facilities was disposed of to the well from 1957 to 1981. Process waste was disposed of to the well from 1957 to 1984. Two small-quantity one-time releases of approximately 50 mCi Co-60 in 1969 and 212 L (56 gal) of turbine oil have been documented as released to the well. Use of the well was discontinued, and in September 1984, the well was abandoned in place. In September 1993, during measurement of the water level in the monitoring pipe next to the injection well, petroleum product was discovered at 64 m (212 ft) bgs. The oil was not believed to be associated with processes at WRRTF-05 and was designated as a new site WRRTF-13. In January 1994, the sump above the well was excavated and removed. In March 1994, the well was cleaned out by forcing materials out into a tank using compressed air. Subsequent sampling indicates no contamination in the well. The well was sampled in February 1995 and June 1995. Results indicated low levels of contamination.
1-08	WRRTF-13	WRRTF fuel leak	WRRTF-13 is the environmental contamination associated with the diesel fuel oil discovered at the WRRTF-05 injection well in November 1993. The results of the OU 1-08 Track 2 investigation indicate soil contamination at WRRTF-13 is at depth (5 ft or greater) and contaminants detected at the site were found at relatively low concentrations.
1-09	TSF-36	TSF TAN-603 french drain	TSF-36 is a french drain that was installed in the early 1950s and extends to about 6 ft belowgrade. The drain was connected to a sump that was fed by floor drains and condensate lines from a boiler room. Records indicate the drain was last used in 1980. All available drawings and documentation indicate the french drain was designed and used for handling steam condensate from the boilers only. The drain was removed in the spring of 1995.

Table 1-2. (continued).

OU	Subunit	Site name	Description
1-09	TSF-37	TSF contaminated well water spill	TSF-37 is the site of an 83,160-L (22,000-gal) spill of contaminated groundwater in 1983. The water was produced during purging and sampling of the TSF-05 injection well in January 1988 and stored in a 189,000-L (50,000-gal) aboveground tank located near the TSF STP. The spill was a result of freezing and thawing, which caused the tank drain valve to crack.
1-09	WRRTF-02	WRRTF two-phase pond	WRRTF-02 is an unlined surface impoundment that had previously received waste from two-phase loop experiments. These experiments occurred from 1979 to 1985, and the effluent to the pond consisted of primarily steam condensate and process wastewater potentially containing demineralization or corrosion-inhibiting solutions.
1-09	WRRTF-03	WRRTF evaporation pond	WRRTF-03 is an unlined evaporation pond used to dispose of process water and cooling water from 1983 to the present. Records indicate that minor amounts of sulfuric acid, sodium hydroxide, and hydrazine were disposed of in the pond.
1-09	WRRTF-06	WRRTF sewage lagoon	WRRTF-06 is an unlined surface impoundment that received nonhazardous sanitary and process waste from 1984 to the present. Records indicate that the effluent contained only low concentrations of inorganic and organic compounds.
1-10	TSF-27	TSF paint shop drain	TSF-27 is the Paint Shop Floor Drain Leach Field. It is located approximately 4.8 m (16 ft) west of building TAN-636, the Carpenter and Paint Shop. TSF-27 was used from 1967 through the early 1980s for disposing paint products and thinners from TAN-636, including approximately 9,450 L (2,500 gal) of Stoddard solvent (kerosene-type hydrocarbons). Drilling and sampling have been conducted and soil samples collected from the leach field.
New site	LOFT-16	LOFT landfill northeast of LOFT-02 drainage pond	LOFT-16 was a landfill operational from 1973 to 1980. The landfill was used for disposal of excess construction materials and equipment, such as manual power tools and debris, at the completion of the LOFT construction. The time that the landfill was operational coincides with the LOFT construction. No burning of waste is believed to have occurred at this site. When the landfill reached capacity, earth-moving equipment backfilled the site, compacted the soil, and graded the area.
New site	LOFT-12	LOFT north transformer yard PCB spill and soil site	LOFT-12 is located in the northern part of the LOFT facility at the TAN LOFT Transformer Yard No. 2. Soil and concrete pads contaminated with polychlorinated biphenyls (PCBs) were identified during a 1989 inspection of all the INEEL transformer yards. A removal action with a target cleanup level of 1.0 mg/kg was completed in 1994. Verification sampling indicated that the PCB-contaminated soil had been adequately remediated.
New site	TSF-44	TSF diesel fuel pipeline leak northwest of TAN-604	TSF-44 is the location of diesel fuel releases caused by leaks in the line running from the main storage tanks to the boilers. After each release the contaminated soil was removed and disposed at the TAN borrow pit.
New site	TSF-45	AEC burial pit	TSF-45 is located less than 1 mi north of the LOFT hanger, immediately east of the TAN gravel pit (also known as TSF-04) and is on the north side of the former, unpaved road from TAN/TSF to the gravel pit. TSF-45 is the site of the AEC burial pit. The pit was used for construction waste disposal during and after renovations on the LOFT facility. A concrete marker with a brass cap designates the northeast corner of TSF-45. The brass cap is inscribed with "Atomic Energy Commission Pit."

Table 1-2. (continued).

OU	Subunit	Site name	Description
New site	None	IET pond and ditch west of IET	As described on the New Site Identification Form, construction of the ditch and pit is evident in a 1954 photograph. A site survey was performed in March of 1994, which included monitoring for VOCs, mercury, and radiation. No evidence of contamination was observed.
New site	None	IET gravel pit	As described on the New Site Identification Form, review of a 1976 photograph indicates a quarry site northeast of IET. A site survey was performed in March of 1994, which included VOC, mercury, and radiation monitoring. No evidence of contamination was observed.
New site	None	IET burn pit east of IET	As described on the New Site Identification Form, a 1954 photograph indicates a burn pit west of the facility. A site survey was performed in March of 1994, which included monitoring for VOCs, mercury, and radiation.
New site	None	LOFT burn pit northwest of LOFT	As described on the New Site Identification Form, photographs from 1972 and 1973 indicate a burn pit located northwest of the LOFT Hangar Building. A site survey was performed in March of 1994, which included monitoring for VOCs, mercury, and radiation.
New site	None	TSF burn pit II southwest of the TSF-05 Injection Well	As described on the New Site Identification Form, photographs from 1957 indicate a burn pit south of TSF-10 pond. The burn pit was active until 1959. A site survey was performed in March of 1994, which included monitoring for VOCs, mercury, and radiation.
New site	None	TSF radioactive spills on Bear Blvd. west of TAN-607	As described on the New Site Identification Form, there were reports of spills of radioactive liquids along Bear Blvd. A site survey was performed in March of 1994, which included monitoring for VOCs, mercury, and radiation. No evidence of contamination was observed.
New site	None	Radioactive spill 1 mi. south of TAN on Lincoln Blvd.	As described on the New Site Identification Form, a uranium contaminated water spill occurred south of WRRTF along Lincoln Blvd.; however, a site survey in March 1994 did not reveal field radiation measurements above background for the area. The spill is believed to have been approximately 5 gal and could not be located after surveying approximately 1 mi of roadway.
New site	None	Sand piles south of TSF and southwest of WRRTF	As described on the New Site Identification Form, piles of sand containing a rust-like material were identified, sampled and analyzed for toxicity characteristic leaching procedure constituents in August 1993.
New site	None	WRRTF Transit Area	As described on the New Site Identification Form, a construction debris area containing small pieces of transit cement. Site visits and field screening detected no evidence of hazardous waste, hazardous substances or hazardous constituents at the site.
New site	None	Broken pipe in berm east of TAN-633	As described on the New Site Identification Form, a broken pipe located in the berm about 35 to 50 ft east of TAN-633. Previous disposal of liquids down the pipe leading to tanks TSF-17 and TSF-21 was confirmed through employee interviews. The lines have been cleaned out. There is no residual contamination suspected in the system.

Table 1-2. (continued).

OU	Subunit	Site name	Description
New site	None	Buried asbestos behind the hanger at SMC	As described on the New Site Identification Form, buried asbestos insulation was encountered while digging a trench in 1989. The occurrence was previously reported and designated as LOFT-16.

a. Sites identified as "None" do not have OU designations because they are classified as no action sites. These sites were originally designated as potential release sites in the Consent Order and Compliance Agreement (COCA), but were found to require no further action as listed in the FFA/CO in accordance with documentation in the Administrative Record.

b. "New Sites" are those identified after the FFA/CO was signed.

1.4 References

- Lewis, S. M., et al., 1996, *Work Plan for Waste Area Group 1 Operable Unit 1-10 Comprehensive Remedial Investigation/Feasibility Study*.
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- Meyer, T. J., Trippet, W. A., and K. J. Kaal, 1992, *Track 2 Sampling and Analysis Plan for OU 1-03: TSF-03 and WRRTF-01 Burn Pits*, EGG-WM-10126.
- EPA, 1988, *Guidance for Conducting Remedial Investigations and Feasibility Studies Under CERCLA*, Interim Final, EPA/540/G-89/004, October 1988.